Original Article

Awareness, attitude and use of labor analgesics by pregnant women at State Specialist Hospital, Akure

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ABSTRACT

Background: Pain relief during labor has always been associated with myths and controversies. Several groups of people think that God has made this process painful and no interference should be done in it. In the present civilization, there is no circumstance where it is considered acceptable for a person to experience severe pain, amenable to safe intervention while under a physician's care.

Objective: This study assessed the level of awareness of pregnant women about labor analgesia and factors preventing them from having analgesia in labor.

Study Design: This study is a descriptive cross-sectional study.

Methodology: Questionnaires were used to obtain information on awareness, attitude and use of labor analgesia from pregnant women at the booking clinic visit. Three hundred (300) consenting pregnant women were recruited into the study including provision for attrition. Data were analyzed with the Statistical Package for Social sciences (SPSS) 20. Proportions were calculated for independent variables while crosstabulation was done for related variables to find *P* value for statistical significance.

Results: Level of awareness of labor analgesia was 21%. Majority of the respondents (70.3%) believe that among all health professionals, it is doctors that should inform them about labor analgesia. Only 4.4% had used labor analgesic in their previous deliveries. About 81% of respondents desire labor analgesia in their next delivery. Among factors analyzed, only severity of last labor had significant influence on the patient's desire for analgesia in their next delivery (*P* value = 0.026).

Conclusion: The awareness rate of pregnant women about labor analgesia is very low. Therefore, all efforts must be made to ensure that discussions about labor analgesia are commenced as early as at the booking visit to improve on pregnant women's awareness about labor analgesia and help their acceptability and choices. Attitude towards labor analgesia is not influenced by type of facility where the delivery took place suggesting possibility of socio-cultural influence of the people in the area of study on the practice of labor analgesia.

Key words: Attitude; awareness; labor analgesia; labor pain.

Introduction

Pain during labor is a physiological phenomenon with psychological and emotional components. The pain during first stage of labor is associated with ischemia of the uterus during contraction as well as effacement and dilation of the cervix.[1,2] Second stage pain is sharp, well localized, and not referred. Although the second stage of labor is briefer than the first

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stage, the pain is usually more intense, perhaps due to distension of pelvic structures and perineum during descent of presenting part, ischemia, and frank injury.

Accounts from the medical literature show that pain perception and need for analgesia in labor varies in onset, timing, duration, and severity. Research has shown that these variations relate to socio-demographic and biological variables like age, parity, race, religious affiliations and ethnicity[3] and support during labor. An observational study by Aya and colleagues suggests circadian variation in labor pain perception.[4]

Almost all women experience pain during labor, though very occasionally, women feel no pain in labor and give birth unexpectedly.[5] At the other extreme labor pain has been reported to be the most severe pain that a woman experiences in her lifetime.[6] The pattern of pain appears to be different in nulliparous as compared with multiparous women. Typically, nulliparous women experience greater sensory pain than multiparous women during early labor (before 5 cm dilatation).[7] The positions adopted by women and the extent of their mobility during labor may also significantly affect the perception of pain.[8]

A cochrane systematic review[9] found reduction in the reporting of severe pain during the second stage of labor for women using any of upright or lateral positions as compared with women lying on their back during labor.[10] Women may also experience induced labor as being more painful than spontaneous labor.[11,12]

Several methods including primitive use of rings, necklace, amulets, counter stimulation, and other magical charms have been used to relieve labor pains but these methods were based mainly on suggestions and distractions.[5] It is a fact that association of labor with severe pains have been unpleasant from time immemorial[13] and are well documented.[14,15]

While most people are aware of association of labor with pain, majority of parturients are not aware of the appropriateness of labor pain relief and the modalities of doing so. In a study that looked into the awareness and attitude of Indian pregnant women towards labor analgesia, most of the women (98%) had no idea about labor analgesia but 95% of the participants expressed their interest to learn about the technique and its advantages.[16,17] In Nigeria, a crosssectional study on the awareness and desirability of the Nigerian women about analgesia use during childbirth, 38.3% were aware of analgesia use, 47.5% desire analgesia in labor, and 45% of this prefer intramuscular injections. Parity affected desirability as most multipara desire it in their subsequent pregnancy.[18] In Zaria, a multicentre collaborative cross sectional pilot study of provider perspectives concerning pain relief during labor, 94.8% of respondents agree that pain relief is needed in labor while 3.2% said pain relief was not necessary during labor. About ninety-four percent (93.7%) of the respondents had attended a woman in labor in the 4 weeks preceding the survey. Less than half of the respondents (48.4%) administered pain relief in labor. Among those who did not offer pain relief agents in labor, majority 54.5% had no reason. Unavailability of methods, inability to afford the cost of pain relief, lack of knowledge and skills as well as lack of essential equipment to provide the procedure were also given as reasons for not offering analgesia to women in labor.[19]

Severe unrelieved labor pains causes patient dissatisfaction and is known to be associated with post-partum depression and post-traumatic stress disorder.[20]

Labor induces a massive catecholamines surge in the fetus, particularly in the second stage, which helps to preserve blood flow to brain, heart and adrenal and to promote post-natal adaptive circulatory changes and surfactant release. While this fetal stress response is favorable to the fetus, unmodified "natural" labor produces maternal changes that are far from innocuous. Maternal hyperventilation in response to pain has long been known to have adverse fetal effects.[21,22] It leads to: Respiratory alkalosis and a left shift in the oxygen dissociation curve (potentially disadvantageous to placental transfer of oxygen), a compensatory metabolic acidosis which becomes progressively more severe as labor advances and is also conveyed to the fetus.[23] Episodes of hypoventilation, hence hemoglobin desaturation, between contractions[24] and uterine vasoconstriction. Meanwhile the stress of labor also leads to release of maternal cortisol and catecholamines, which may prolong labor and impair placental flow.[25,26] Stress hormones also bring about lypolysis with release of free fatty acids (readily transferable across the placenta) and hyperglycemia, which will exacerbate fetal hypoxia. All these changes tend to intensify fetal metabolic acidosis, which indeed becomes progressively more severe as labor advances. Unrelieved labor pain also leads to intense fear of vaginal delivery and increased rate of elective caesarean section due to maternal request.[27]

The concept and options of analgesia is best introduced to the pregnant women right from the antenatal period.

There are many methods of analgesia during labor which are broadly classified into regional and non-regional techniques with the non-regional being further classified as pharmacological and non-pharmacological methods. Studies

in New Zealand and the United Kingdom have found that more than 95% of Hospitals surveyed routinely offered intramuscular pethidine.[28,29] Parenteral opioids are standard care during labor in many obstetrics units. Opioids are relatively inexpensive drugs and the use of pethidine, meptazinol, or diamophine during labor is common midwifery and obstetric practice in some countries. In other parts of the world, parenteral (intravenous or intramuscular) opioids commonly used in labor include morphine, nalbuphine, fentanyl and, more recently, remifentanil.[30] It is common knowledge that some of the above agents have one or two side effects that some people try to run away from.[31] These side effects, most of which are minor, cannot be enough bases upon which denying parturients the necessary comfort of childbirth should be predicated because there are analgesics without these side effects for example, paracetamol is a generally safe, readily available, easily administered, and well-tolerated drug.[32]

Other methods, like regional labor analgesia, are limited in usage because of inadequacy of skills, facility, and personnel especially in primary health care centers and maternities where most of the deliveries take place in developing countries.[33]

Aim of the study

The study assessed the level of information of pregnant women about labor analgesia and found out factors militating against administration of analgesia in labor.

Objectives of the study

This study tried to find out the level (in terms of proportion) of awareness of pregnant women about labor analgesia and factors that may be preventing them from having analgesia in labor.

Methodology

Site

The study was carried out at the booking clinic of the antenatal clinic in the Obstetrics and Gynaecology department, State Specialist Hospital, Akure.

Design

The study is a descriptive cross-sectional study.

Study population

About 300 multiparous pregnant women coming for their first antenatal visit in index pregnancy (booking clinic) were recruited into the study after giving their consent. This number includes the allowance for attrition.

Inclusion criteria

Only pregnant women that have carried at least one previous pregnancy to term before were recruited for the study.

Data collection instrument

A simple structured questionnaire was used as instrument for collecting data. It was written in plain English language and provision for interpretation made for those that cannot understand or read English.

Sampling method

Women that met the inclusion criteria were serially recruited as they come until the required number of 300 which includes the allowance for attrition was completed. The questionnaire was administered to the consented patients by antenatal clinic nurses and intern doctors under the supervision of the researchers.

Sample size calculation

The Study is a descriptive study. The following formula was used to calculate the sample size.

$$N = \frac{4(z_{crit})^2\, p(1-p)}{D^2}$$

Where Z_{crit} is standard normal deviate corresponding to chosen Confidence interval. For Confidence interval of 95%, it is 1.96

P is pre-study estimation of proportion to be measured

D is the width of confidence interval.

$$\text{Therefore } N = \frac{4 \times (1.96)^2 \times 0.95\,(1-0.95)}{0.05^2}$$

$N = 291.96$

$N = 292$

Adding the allowance for attrition of 8 to above gives total Sample size of 300.

Data management

Data were processed by feeding the information into SPSS and then analyzed using the SPSS version 20. Proportions where calculated using percentages and crosstabulation of related variables done to find out relationship between the variables and statistical significance by Chi-square.

Results

Majority of the respondents 140 (46.71%) were in the age group 30-34 years. Only 4 (1.3%) were teenagers and 23 (7.71%) were above 40 years of age [Table 1]. Trading was the occupation of 143 (47.7%) of the respondents. Civil servants were 95 (37.7%), 12 (4.0%) were full house wives, and 46 (15.3%) were artisans [Table 1]. Using Olusanya *et al*.

social class classification,[34] calculated by addition of woman's educational score and husband's professional score, majority 116 (38.7%) of the respondents were in class 2. Only 55 (18.3%) were in social class 1 [Table 1]. Majority 284 (94.7%) of the respondents were of Yoruba ethnic group. Igbo and Hausa were 3 (1.0%) each while 10 (3.3%) were from other smaller ethnic groups. Majority 299 (99.7%) of respondents were married while only 1 (0.3%) was single [Table 1].

Majority of respondents 188 (62.2%) presented for booking in the third trimester between 28 and 42 weeks and 16 (5.3%) booked early at between 1 and 13 weeks [Table 2]. The most commonly adopted delivery position in their last delivery was dorsal position as noted in 240 (80%) of respondents. Other positions were adopted by 60 (20.0%) of respondents [Table 2]. Only 18 (6.0%) of the respondents had home delivery in their last pregnancy, 29 (9.7%) delivered at mission house, 31 (10.3%) at private hospital, the majority 181 (60.3%) delivered at general hospital and 41 (13.7%) had their last delivery in tertiary hospital [Table 2].

Only 67 (21.7%) have heard of labor analgesia before while majority 235 (78.0%) have not heard of labor analgesia before [Table 3]. Of the 67 respondents that have heard of labor analgesia before, majority 17 (25.4%) got the information from nurses, 14 (20.9%) got information from friends, and 11 (16.4%) got information from relatives, 10 (14.9%) got information from fellow patients, 4 (6.0%) got their information from internet or books and 11 (16.4%) got information from doctors [Table 3]. However, majority of respondents 211 (70%) indicated that the expected source of information about labor analgesia is doctors. About Twenty-one percent (21.7%) believe information should be from Nurses while 8.3% belief that information about labor analgesia should be from other sources apart from doctors and nurses [Table 3].

Table 1: SOCIO demographic biodata of respondents

Age Group						**Total**
15-19	20-24	25-29	30-34	35-39	40-45	
4 (1.3%)	12 (4.0%)	38 (12.7%)	140 (46.7%)	83 (27.7%)	23 (7.7%)	300 (10%)
Respondents Occupation						
Full House-wife	Artisan	Traders	Civil Servant			
12 (4.0%)	46 15.3%)	147 (49.0%)	95 (31.7%)			300 (100%)
Respondents Social Class						
Class 1	Class 2	Class 3	Class 4	Class 5		
55 (18.3%)	116 (38.7%)	79 (26.3%)	11 (3.7%)	39 (13.0%)		300 (100%)
Respondents Marital Status						
Single	Married					
1 (0.3%)	299 (99.7%)					300 (100%)
Respondents Ethnic Group						
Yoruba	Hausa	Igbo	Others			
284 (94.7%)	3 (1.0%)	3 (1.0%)	10 (3.3%)			300 (100%)

Values are given as absolute number of respondents and the equivalent percentage of total in parenthesis

Table 2: Obstetric history of respondents

Respondents Gestational Age by Trimester						**Total**
1-13	14-27	28-42				
16 (5.3%)	96 (32.0%)	188 (62.6%)				300 (100%)
Respondents Parity						
1	2	3	4	5	6	
145 (48.3%)	102 (34.0%)	35 (11.7%)	11 (3.7%)	3 (1.0%)	2 (0.7%)	300 (100%)
Respondents Place of Last Delivery						
Home	Mission	Private Hospital	General Hospital	Tertiary Hospital		
18 (6.0%)	29 (9.7%)	31 (10.3%)	181 (60.3%)	41 (13.7)		300 (100%)
Respondents Delivery Position at Last Labor						
Dorsal	Lateral	Squating	Others			
245 (81.7%)	39 (13.0%)	10 (3.3%)	6 (2.0%)			300 (100%)
Respondents Last Labor Duration						
1-12 hours	13-24 hours	25-36 hours	37-48 hours			
231 (77.0%)	62 (20.7%)	3 (1.0%)	4 (1.3%)			300 (100%)

Values are given as absolute number of respondents and the equivalent percentages of total in parenthesis

Majority of the respondents 157 (52.3%) reported that their last labor pain was severe, while 123 (41.0%) reported their last labor pain as moderate. Only 17 (5.7%) reported it as mild [Table 3]. Only 13 (2.7%) ever had analgesia in their previous labor while 287 (95.7%) did not have any analgesia [Table 3]. Reasons given by respondents for not having analgesia in their last delivery include lack of awareness 179 (59.7%) which constitute the majority. It was unavailability in 5 (1.7%) of respondents, fear of side effects in 4 (1.3%), dislike for analgesia in 4 (1.3%) of respondents and 85 (28.3%) had no reason in particular [Table 3].

Of all the respondents, 254 (84.7%) desire pain relief in their next labor, 44 (14.7%) don't desire pain relief in their next labor [Table 3]. Reasons given for not desiring pain relief in labor include not feeling labor pain in last delivery 14 (4.7%), desire to have natural labor 11 (3.7%), fear of side effects 10 (3.3%) while majority did not give any reasons [Table 3].

Out of 55 respondents in social class 1, 47 (85.5%) desire pain relief in their next labor. Of the 116 respondents in social class 2, 99 (85.3%) desire pain relief in next labor. There were 79 respondents in social class 3 and 69 (87.3%) of them desire labor pain relief in their next delivery. 11 respondents in social class 4, 10 of them desire labor analgesia in their next labor while out of 39 respondents in social class 5, 31 of them indicated desire in labor pain relief in their next labor [Table 4].

Out of 67 respondents that had previous awareness of labor analgesia, 53 (81.5%) desire pain relief in their next labor. Out of the 235 respondents that were previously unaware of labor analgesia, 203 (86.4%) indicate desire for pain relief in next labor [Table 5].

Desire for labor pain relief was found to be more in those with less than 3 previous deliveries as 210 (82.7%) of them indicated desire for pain relief while only 8 (17.4%) of those with 3 or more previous deliveries desire labor pain relief at next delivery [Table 6].

None of the 18 patients that had their deliveries at home had analgesia in labor. Out of 29 patients that had their last delivery at mission homes, only 1 (3.4%) had analgesia at those deliveries. Only 2 (6.7%) of the 31 patients that had their last deliveries at private hospitals had analgesia in labor. Of the 181 previous deliveries that occurred at General hospitals, only 3 (1.7%) had analgesia at those deliveries. Only 1 (2.4%) out of 41 deliveries at tertiary hospital had labor analgesia [Table 7].

Out of the 17 respondents that described their last labor pain as mild, Visual analogue scale (VAS 1-3), 12 (70%) of them desire labor analgesia in their next labor. Moderate labor pains (VAS 4-7) was experienced by 123 respondents in their last labor and 100 (81.3%) of them desire pain relief

Table 3: Labor analgesia experience of respondents

Last labor pain severity using visual analogue scale						**Total**
Mild Pain (1-3)	Moderate Pain (4-7)	Severe Pain (8-10)				
17 (5.7%)	123 (41.0%)	160 (53.3%)				300 (100%)
Respondents Awareness about Labor Analgesia						
Yes	No					
65 (21.7%)	235 (78.3%)					300 (100%)
Use of Analgesia During Last Labor						
Yes	No					
13 (4.4%)	287 (95.7%)					300 (100%)
Reason for No analgesia in last Labor						
Unaware	Unavailable	No money	Fear of side effects	Dislike for analgesia	No reason	
179 (59.7%)	5 (1.7%)	1 (0.3%)	4 (1.3%)	4 (1.3%)	107 (35.6%)	
Source of information about Labor Analgesia for those that were aware						
Relatives	Friends	Nurses	Doctors	Fellow patients	Books/internet	Total
11	14	17	11	10	4	67 (100%)
Expected Source of Information about Labor Analgesia						
Relatives	Friends	Nurses	Doctors	Fellow patients	Don't know	
2 (0.7%)	5 (1.7%)	65 (21.7%)	211 (70.3%)	3 (1.0%)	14 (4.7%)	300 (100%)
Desire for Pain Relief in Next Labor						
Yes	No					
254 (84.7%)	46 (15.4%)					300 (100%)
Reason for not desiring pain relief in labor						
Did not feel pain last labor	Wants natural delivery	Fear side effects	Don't Know			
10 (21.7%)	15 (32.6%)	14 (30.4%)	7 (15.2%)			46 (100%)

Values are given as absolute number of respondents and the equivalent percentage of total in parenthesis

in their next labor. One hundred and sixty (160) described their last labor pain as severe (VAS 8-10) and 144 (85.3%) of them desire labor analgesia in their next delivery [Table 8]

Discussion

This study that evaluated the awareness, attitude and use of labor analgesia by pregnant women revealed that majority of our pregnant women are unaware of labor analgesia. The awareness rate was found to be 21.7%. This is even higher than 7% from a study in Uganda and 2% in a study in China.[32] The similar very low awareness rates may be due to the similarity of the countries in socio-cultural and economic status. Another Nigerian study had reported 38.3%.[18]

Despite the fact that majority of respondents (53.3%) reported their last labor pain as severe, only 4.4% of the respondents ever had labor analgesia at their last delivery while 95.6% never had, this shows a very poor use of labor analgesia in this part of the world. The most common reason given for not having analgesia at last labor was unawareness (59.7%) about labor analgesia and majority of them (70.3%) expected that it was the doctor that should inform pregnant women about labor analgesia. Among the 67 respondents that were aware of labor analgesia, majority (17)(25.4%) got information from nurses which is consistent with that of a study in Zaria that earlier reported that 34.8% of respondents got information about labor analgesia from Nurses while 15.5% got from doctors.[35] Therefore, doctors need to be aware of this expectations and do more in this regard.

Majority of the respondents, 254 (84.7%) indicated their willingness to have labor analgesia in their next labor. This is comparable with the outcome of another study where 70% of the respondents indicated desire for pain relief in their next labor.[6] Of those that don't desire pain relief in next labor, reason given by most was the desire to have natural delivery.

Desire for labor pain relief is not affected by the social class of the patient, previous awareness of labor analgesia or place of last delivery as the relationships are not statistically significant. Though the desire for labor pain relief was more in those with more than 1 previous deliveries, the relationship is not statistically significant. The severity of previous labor pain experienced was the only factor found to have significant effect on desire for labor analgesia. (*P* value = 0.026). This is consistent with previous study in a Nigerian Tertiary hospital that reported previous labor experience to be responsible for acceptance to use labor analgesia.[26]

The rate of parturient's use of analgesia in labor in the area of this study is abysmally low as only 4.4% of respondents in this study had used analgesia in their last labor. This is consistent with the findings of a study in Ile-Ife, Nigeria where only 5% of

Table 4: Crosstabulation of Respondents' Social Class and Their Desire for Pain Relief at next delivery

Social Class	Desire for Pain Relief at Next labor		
	Yes	No	Total
Social Class 1	47 (85.5%)	8 (14.5%)	55 (100%)
Social Class 2	99 (85.3%)	17 (14.7%)	116 (100%)
Social Class 3	69 (87.3%)	10 (12.7%)	79 (100%)
Social Class 4	10 (90.9%)	1 (9.1%)	11 (100%)
Social Class 5	31 (79.5%)	8 (20.5%)	39 (100%)
	256 (85.3%)	44 (14.7%)	300 (100%)

Chi-Square test: Pearsons Chi-square value 1.594, *P* value=0.810

Table 5: Crosstabulation of Respondents Awareness of Labour analgesia and Desire for pain relief in next labour

Awareness of labor analgesia	Desire for pain relief in next labor		
	Yes	No	Total
Yes	55 (82.1%)	12 (17.9%)	67 (100%)
No	201 (86.3%)	32 (13.7%)	233 (100%)
Total	256 (85.3%)	44 (14.7%)	300 (100%)

Chi-square test: Pearson's Chi-square value 0.955; *P* value 0.329

Table 6: Crosstabulation of Respondents Number of Children and Desire for Pain Relief in next Labour

Respondents number of children	Desire for pain relief in next labor		
	Yes	No	Total
1	128 (88.3%)	17 (11.7%)	145 (100%)
2	85 (81.7%)	19 (18.3%)	104 (100%)
3	28 (80%)	7 (20.0%)	35 (100%)
4	11 (100%)	0 (0%)	11 (100%)
5	2 (66.7%)	1 (33.3%)	3 (100%)
6	2 (100%)	0 (0%)	2 (100%)

Chi-square test: Pearson's Chi-square=5.947; *P* value=0.311

Table 7: Crosstabulation of place of last delivery and Use of Analgesia at last labour

Place of last delivery	Use of Analgesia at last labor		
	Yes	No	Total
Home	0 (0%)	15 (100%)	15 (100%)
Mission House	1 (2.7%)	35 (97.2%)	36 (100%)
Private Hospital	2 (6.7%)	28 (93.3%)	30 (100%)
General Hospital	3 (1.7%)	175 (98.3%)	178 (100%)
Tertiary Hospital	1 (2.4%)	40 (97.6%)	41 (100%)
Total	7 (2.3%)	293 (97.7%)	300 (100%)

Chi-square test: Pearson's Chi-square value=3.239; *P* value=0.519

Table 8: Crosstabulation of Last Labor pain severity and Desire for Pain relief in next labour

Last Labor Pain Severity	Desire for pain Relief in next Labor		
	Yes	No	Total
Mild	12 (70.0%)	5 (29.4%)	17 (100.0%)
Moderate	100 (81.3%)	23 (18.7%)	123 (100%)
Severe	144 (90.0%)	16 (10.0%)	160 (100.0%)
Total	256 (85.3%)	44 (14.7%)	300 (100.0%)

Chi-square test: Pearson's Chi-square value=7.335, *P* value=0.026

respondents ever had analgesia in their previous deliveries.[36] There is poor attitude of labor analgesia use regardless of whether the delivery was at home, mission house, general hospital or tertiary hospital This suggests that the peoples geographic and socio-cultural factors may be influencing their attitude towards labor analgesia.

Conclusion

The awareness rate of pregnant women about labor analgesia is very low. Therefore, all efforts must be made to ensure that discussions about labor analgesia are commenced as early as at the booking visit to improve on pregnant women's awareness about labor analgesia and help their acceptability and choices. Attitude towards labor analgesia is not influenced by type of facility where the delivery took place suggesting possibility of socio-cultural influence of the people in the area of study on the practice of labor analgesia.

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Conflicts of interest

There are no conflicts of interest.

References

1. Ralph WY, John SM. Obstetric analgesia and anesthesia. In: Decherney AH, Nathan L, editors. Current Obstetric and Gynaecologic Diagnosis and Treatment. 9th ed. Lange Medical Books/McGraw–Hill, New York, USA; 2004. p. 441-53.
2. Rowlands S, Permezel M. Physiology of pain in labour. Baillieres Clin Obstet Gynaecol 1998;12:347-62.
3. Olayemi O, Adeniyi RA, Edoho ES, Akinyemi OA, Aimakhu CO, Shoretire KA. Determinants of pain perception in labour among parturients at the University College Hospital, Ibadan. J. Obstet Gynaecol 2005;25:128-30.
4. Aya AG, Vialles N, Mangin R, Robert C, Ferrer JM, Ripart J, *et al*. Chronology of labour pain perception: An observational study. Br J Anaesth 2004;93:451-3.
5. Gaskin IM. The pain/pleasure riddle. Ina May's Guide to Childbirth. New York: Bantam Dell; 2003. p. 150-66.
6. Ezeonu PO, Anozie OB, Onu FA, Esike CU, Mamah JE, Lawani LO, *et al*. Perception and practice of epidural analgesia among women attending antenatal clinic in FETHA. Int J Womens Health 2017;9:905-11.
7. Lowe NK. The nature of labor pain. Am J Obstet Gynecol 2002;186:S16-24.
8. Kibuka M, Thornton JG, Kingswood CJ. Position in the second stage of labour for women with epidural anaesthesia. Cochrane Database Syst Rev 2009. [doi: 10.1002/14651858.CD008070].
9. Gupta JK, Hofmeyr GJ, Smyth RMD. Position in the second stage of labour for women without epidural anaesthesia. Cochrane Database Syst Rev 2004. [doi: 10.1002/14651858.CD002006.pub2].
10. National Collaborating Centre for Women's and Children's Health. Induction of labour. NICE Clinical Guideline 70. London; 2008.
11. Cohens J. Doctor James Young Simpsons, Rabbi Abraham De Sola, and Genesis Chapter 3, verse 16. Obstet Gynecol 1996;88:895-8.
12. Cameron EA, McGillivray N. Sir James Young Simpson and religion: Myths and controversies. J Med Biogr 2013;21:33-40.
13. Ali Beigi NM, Broumandfar K, Bahadoran P, Ali Abedi H. Women's experience of pain during childbirth. Iran J Nurs Midwifery Res 2010;15:77-82.
14. Friedman M, Friedland GW. Medicines 10 greatest discoveries. BMJ 1999;319:389.
15. Pereira L. The early history of labour analgesia: Women's strength. Sciencia Medica 2014;24. doi: 10.15448/19806108.2014.4.18161.
16. Shidhaye RV, Galande M, Bangal BV, Smita J, Shidhaye RU. Awareness and attitude of Indian pregnant women towards labour analgesia. Anaesth Pain and Intensive Care 2012;16:131-6.
17. Melzack R. The myth of painless childbirth. Pain 1984;19:321-37.
18. Owa OO, Alao FO, Faturoti SO, Temenu BA, Lemadoro SA. Acceptability of painless labour among pregnant women in Owo, South West Nigeria. Research in Obstetrics and Gynaecology 2015;3:13-6.
19. Ogboli-Nwasor E, Adaji SE, Bature SB, Shittu OS. Pain relief in labour: A survey of awareness, attitude and practice of Health care providers in Zaria, Nigeria. J Pain Res 2011;4:227-32.
20. Wijma K, Soderquist J, Wijma B. Post traumatic stress disorder after childbirth: A cross sectional study. J Anxiety disord 1997;11:587-97.
21. Huch R. Maternal hyperventilation and the fetus. J Perin Med 1986;14:3-17.
22. Motoyama EK, Rivard G, Acheson F, Cook CD. Adverse effect of maternal hyperventilation on the foetus. Lancet 1966;1:286-8.
23. Brownridge P. The nature and consequencies of childbirth pain. Eur J Obstet Gynecol Reprod Biol 1995(59 Suppl):S9-15.
24. Minnich ME, Brown M, Clark RB, Miller FC, Thompson DS. Oxygen desaturation in women in labor. J Reprod Med 1990;35:693-6.
25. Lederman RP, Lederman E, Work BA Jr, McCann DS. The relationship of maternal anxiety, plasma catecholamines, and plasma cortiso lto progress in labor. Am J Obstet Gynecol 1978;132:495-500.
26. Segal S, Wang SY. The effect of maternal catecholamines on the calibre of gravid uterine microvessels. Anesth Analg 2008;106:888-92.
27. Saisto T, Halmesmakai E. Fear of childbirth: A neglected dilemma. Acta obstetrician et Gynecologica Scandinavica 2003;82:201-8.
28. Lee K, Ho KM. Obstetric regional analgesia services in New Zealand: A national survey. N Z Med J 2004;117:U177.
29. Saravanakumar K, Ganstang JS, Hasan K. Intravenous patient controlled analgesia for labour: A survey of UK practice. Int J Obstet Anesth 2007;16:221-5.
30. Evron S, Ezri T. Options for systemic labour analgesia. Curr Opin Anaesthesiol 2007;20:181-5.
31. Nissen E, Lilja G, Matthiesen AS, Ransjö-Arvidsson AB, Uvnäs-Moberg K, Widström AM. Effects of maternal pethidine on infants developing breast feeding behaviour. Acta Peadiatr 1995;84:140-5.
32. Omotayo RS, Faturoti SO, Ehinmitan RR, Alao FO. Comparison of intramuscular paracetamol and intramuscular pethidine as analgesic in the first stage of labour. Trop J Obstet Gynaecol 2018;35;348-57.
33. Moyer CA, Mustafa A, Drivers and deterrents of facility deliveryin sub-saharan Africa: A systematic review. Reprod Health 2013;10:40.
34. Olusanya O, Okpere E, Ezimokhai M. The importance of social class in voluntary fertility control in a developing country. West Afr J Med 1985;4:205-11.
35. Ekweani JC, Avidime S. The awareness and desirability of pain relief in labour among pregnant women in Zaria. Portharcourt Med J 2016;10:115-8.
36. Faponle AF, Kuti O, Perception of labour pain by pregnant women in South Western Nigeria. Trop J Obstet Gynaecol 2004;21:153-5.